



Engineering Staff College, Bangladesh

An Autonomous Body of The Institution of Engineers, Bangladesh

City Office: IEB Headquarters, Ramna, Dhaka-1000; Main campus: Gazaria, Munshiganj
Phone: 880-2-223354144, Email: escb@esc-bd.org, rector@esc-bd.org Web: www.esc-bd.org

Training Notice

Training Course on **Advanced AutoCAD Based Electrical System Design for Industrial, Commercial & Smart Residential Facilities.**

Admission open **12th July-2026; Mode of Participation: Both Online & Offline**

Resource Person & Course Director

Engr. Md.Shahidul Islam PEng, F/11990 (Life), M-IEEE, M.Sc Engg.(EEE), MBA, Executive Engineer (E-M Design), HED (PRL), Ministry of Health & Family Welfare, Registered with Rajuk-ECPS, Scopus Author, Chief Adviser: Tie-ins Engineering Design.

For Details; Engr. Rahmatullah F/14360 **(01911391407)**, Training Manager, ESCB

For Enrolment Fee: Bkash Payment; Mr. Maruf **(01712807456-personal)**, Officer, A/C Section, ESCB

Course Duration: 02nd August -16th August 2026, **Time:** 06:00 PM.to 09:00 PM (Total: **24 hours**); This Course focuses on teaching the Fundamentals and Advanced details of AutoCAD and applying them to the Electrical System Design of modern Multistoried Residential Apartment Buildings, Commercial Buildings, along with the Electrical Layout and Single Line Diagram (SLD) design of Industrial facilities using AutoCAD, covering Electrical Load Calculation, Illumination Calculation, Power Distribution, Equipment connections and Protection Systems.

Orientation Date & Time 02nd August-2026 at 06.00 PM. **Venue:** Engineering Staff College, Bangladesh, ESCB City Campus, IEB HQ, Ramna, Dhaka-1000.

Course Fee 10,000 BDT IEB Member

(AM/M/F) :9,500 **BDT**

Early Bird : 9,500 **BDT**

Special Discounted Fee

Group Discount: **9,500 BDT** per person (for 3 + from the same/Different organization)

Registration Deadline: 6:00 PM of 1st August 2026; **Certificate:** After Successful Completion of Training, all trainees will achieve **total 24 hrs** Training Certificate. Interested Persons are requested to register their names by filling up the **Google Form link** as: <https://forms.gle/cs9JHkc72BkM22h98>

Upcoming Events:

- 1) Energy-efficient, reliable, and cost-effective operations and maintenance of multi-building portfolios of Building Management Systems (BMS).
- 2) Data analytics, reporting and trend analysis to optimize performance of complex Building Management Systems (BMS).

With Thanks

✓ Rector, Engineering Staff College, Bangladesh (ESCB),
TELEPHONE-+88-02-223354144, E-MAIL rector@esc-bd.org

Copy to: For Kind Information

1. President, IEB
2. Vice President (Academic & International Affairs/HRD/Admin & Finance/S&W), IEB
3. Honorary General Secretary, IEB
4. Honorary Assistant General Secretary, (Academic & International Affairs/HRD/Admin & Finance/S&W), IEB
5. Chairman, Vice Chairman, Secretary, (All Centre & Sub Centre)/All Engineering Division, IEB
6. All unit heads, Engineering Staff College, Bangladesh (ESCB)
7. Office Copy.



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- **Course Title** Training Course on **Advanced AutoCAD Based Electrical System Design for Industrial, Commercial & Smart Residential Facilities.**
- **Course Duration** 02-August-2026 to 16 August-2026, Every Alternate Day: 6pm to 9:00 pm
24 hours, 8 Classes.
- **Course Contents** Introduction to AutoCAD Fundamentals and Advanced details (Drawing Units, Drawing Limits, Trim, Offset, Extend, Mirror, Rotate, Layer, Block, Plotting & Printing etc.) Introduction to Electrical Standards & Symbols as per BNBC for Electrical Services System Design. Electrical Layout and Installation Diagram for Lights, Fans, 2-Pin & 3-Pin Sockets, AC outlets, Switch Boards, SDB, DB, FDB, MDB & Sub-Station Equipment etc. (Using Soft Copy of Electrical Symbols with AutoCAD) Practice of preparing Conduit/Wiring and Circuit Diagram in detailed by AutoCAD. Preparing SLD for Layout Diagram of Industry and Sub-Station by AutoCAD Illumination Calculation, Load Calculation, fixing Circuit Breaker Rating and Cable/BBT Size, Lightning Protection, Earthing System, & Preparing BOQ, Practice with complete Project (Professional)
- **Course Benefit** In the present era, technology plays a vital role in every field. Engineers across all sectors are using modern software to complete various engineering designs and within a shorter period of time. Electrical Services System Design is no exception. With the help of Advanced AutoCAD, it is possible to create Electrical Layout Diagrams, Circuit Diagrams, and Single Line Diagrams (SLD) efficiently, accurately, and in a very short time.
Learn Professional AutoCAD tools and techniques for Electrical Design
Gain skills in creating Single Line Diagrams (SLD)
Prepare for Jobs in Electrical Design and Engineering fields
Increase career opportunities in Construction and Industrial Sectors
Develop confidence in handling Electrical Design Projects independently.
- **Who should attend** Engineers, Architects, Engineering Students, and professionals working in related job sectors.
- **Number of Participants** Maximum number of participants in one batch will be 15 on first come first serve basis
- **Venue** Training Lab, ESCB City Campus, IEB H/Q, Ramna, Dhaka-1000.
- **Course Fee** Tk.10000/= per percipient
- **Last Date of Receiving Nomination** 01.08.2026.

A Centre of Excellence for Continuing Professional Development

Training Course on Advanced AutoCAD-Based Electrical System Design for Industrial, Commercial & Smart Residential Facilities



Engineering Staff College, Bangladesh (ESCB)

A Center Of Excellence For Continuing Professional Development

Prepared and presented by:
Engr. Md Shahidul Islam PEng.
Cell: +880 1711268859
Tieins69@gmail.com

Day-01

Introduction:

- a. AutoCAD Fundamentals
- b. AutoCAD Interface (Ribbon, Menu Bar, Toolbars, Command Line)
- c. UCS (User Coordinate System)
- d. Grid, Snap, Ortho, Polar Tracking, Object Snap (OSNAP)
- e. Set Drawing Units & Drawing Limits
- f. Make Layer and Layer Properties
- g. Object Properties (Color, Line Type, Line weight)
- h. Basic Drawing Commands (Line, SP line, Circle, Arc, Rectangle, Polygon)

Day-02

- a. Modify Commands (Move, Copy, Rotate, Mirror, Scale, Offset, Trim, Extend, Fillet, Chamfer, Stretch, Break, Join, Explode)
- b. Hatch
- c. Block
- d. Text
- e. Dimensioning (Linear, Aligned, Angular, Radius, Diameter, Continue)
- f. Leader
- g. Measure, Divide & Area Calculation
- h. Plotting
- i. Keyboard Shortcuts
- j. Purge
- k. Electrical Drawing Standards (Layer Naming, Symbols, Blocks)
- l. 3-D Tools

Day-03

Scope of Work in Electrical Services Design.

Two parts in Electrical Design.

- i. Power System
- ii. Communication, Safety & Security System

1. Internal Electrification.
2. External Electrification.

Internal Power Distribution

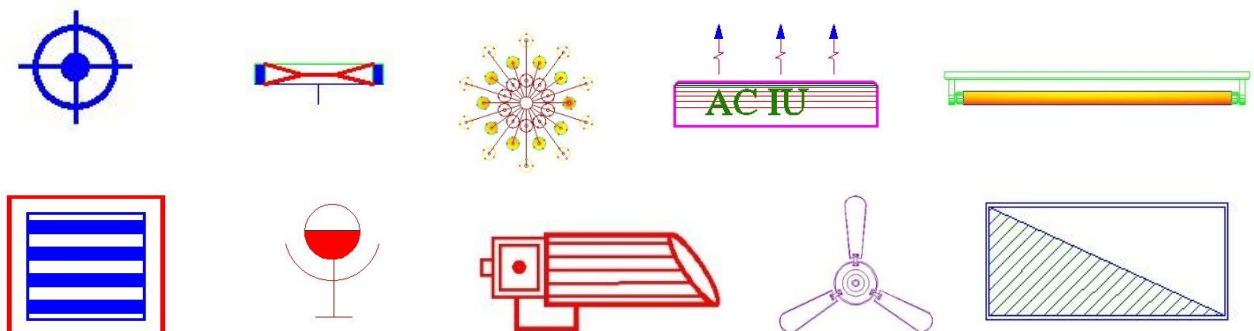
Sub-Station

Standby Generator

Earthing & Lightning Protection

Introduction to Electrical Symbols:

Symbol of Fittings:



Codes and Standards:

BNBC: (Bangladesh National Building Code): -Building Requirements in Bangladesh.

IEC: (International Electrotechnical Commission): - International Electrical Standards.

IEEE (Institute of Electrical and Electronics Engineers): - Power Systems, Substations, Protection, Grounding, etc.

NFPA: (National Fire Protection Association): - Fire Protection and Electrical safety.

NFPA 72 (Fire Alarm): National Fire Alarm and Signaling Code.

NFPA 13: Fire Protection System – Fire Hydrant, Fire Pump, Sprinkler etc.

ISO: (International Organization for Standardization)

ISO 9001: Quality Management System (QMS)

ISO 14001: Environmental Management System (EMS)

ISO 45001: Occupational Health and Safety Management Systems (OHSMS)

ISO 50001: Energy Management Systems.

Day-04

- a. Study a Soft Copy of the Architectural Plan of a Residential Building (G+9)
- b. Design and Preparation of Electrical Layout and installation Diagrams of Light Points, Fan Points, 2-Pin Socket Points using AutoCAD.
- c. Insert Switch Boards and SDB Boards in the Drawing using AutoCAD.
- d. Identification, Naming, and Serial Numbering of Switchboards and Electrical Points using AutoCAD.

Day-05

- a. Various Size of Cables/BBT Used in Wiring Systems.
- b. Preparation of Conduit Layout/Wiring Diagrams for Lights, Fans and Power Points using AutoCAD
- c. Design and Preparation of Electrical Layout and installation Diagrams of AC, 3-Pin Sockets, & others Power Points using AutoCAD.
- d. Preparation of Conduit Layout/Wiring Diagrams for AC, 3-Pin Sockets and other Power outlet Points using AutoCAD
- e. Preparation of detailed Circuit Wiring Diagrams for Switchboards and Electrical Points using AutoCAD.

Day-06

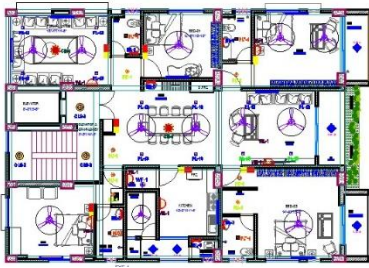
- a. Design and Preparation of Layout and installation Diagrams for Communication system (Telephone, Intercom, Internet, TV, CCTV) using AutoCAD.
- b. Preparation of Conduit Layout/Wiring Diagrams for Communication system (Telephone, Intercom, Internet, TV, CCTV) using AutoCAD
- c. Load Calculation (Normal/Essential) for Lights, Fans, 2-Pin Sockets, 3-Pin Sockets, AC, Lift, Pump etc.
- d. Selection and Sizing of Circuit Breakers and Electrical Cables.
- e. Determination of the sizes and Ratings of Various Substation Equipment.
- f. Preparation of SLD for Substation & Residential Units.
- g. Preparation of Earthing System Drawing.
- h. Preparation of Lightning Protection System Drawing.

Day-07

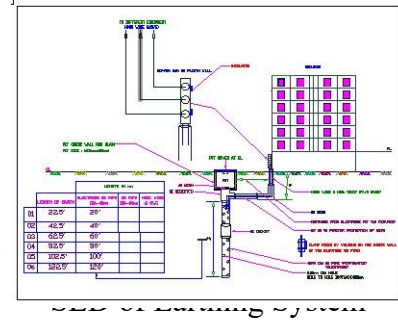
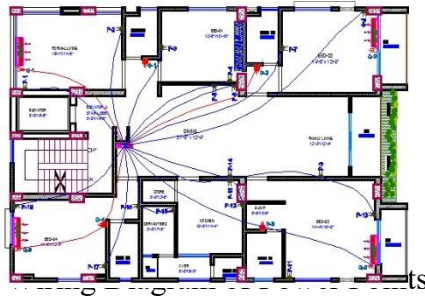
- a. Calculation of Lumen
- b. Installation of Light with wiring in an Industry/Factory
- c. Installation of Machine with Wiring in an Industry/Factory
- d. Complete Project (Professional): Complete Professional Electrical System Design of a 10-Storey Residential Building. (G+9 - 4 Units/per Floor).

Day-08

Preparing SLD for an Industry/Factory



Layout of Light & Fan Points



Dear Sir,

Assalamu Alaikum.

I am Engr. Md. Shahidul Islam P.Eng. As a Resource Person at the Engineering Staff College Bangladesh (ESCB), I am going to conduct a Training Course titled "**Advanced AutoCAD-based Electrical Services Design for Industries, Commercial Buildings, and Smart Residential Facilities,**" which is scheduled to begin on 2 August 2026.

I would like to humbly request your kind support in encouraging the EEE engineers and EEE students within your professional network to enroll in this course.

Furthermore, I would like to seek your kind permission to arrange a seminar in the Department of Electrical and Electronic Engineering (EEE) at your University to introduce the course outline and explain its objectives, contents, and career benefits to the students. I believe this seminar will help them better understand the practical importance of advanced electrical services design and its applications in the industry.

I would be grateful for your kind approval and support in arranging this seminar at your convenience.

Thank you very much Sir for your kind support and cooperation.

Best regards,

Engr. Md. Shahidul Islam P.Eng.
M.Sc. Engg. (EEE), MBA, F-IEB, M-IEEE
Scopus-Indexed Author
Executive Engineer (E-M Design) (PRL)
Health Engineering Department (HED)
Ministry of Health & Family Welfare